REMARKS

Claims 4 and 7-19 were pending in this application. Claims 7, 8, 11-15, 18, and 19 are canceled without prejudice. Claims 4, 9, 10, 16, and 17 have been amended. New claims 20 and 21 have been added. Applicants expressly reserve the right to pursue protection of any or all cancelled subject matter in one or more continuing applications. All rejections of the canceled claims are hereafter treated as moot.

No new matter is introduced by the foregoing amendments. Claim 4 has been amended to include the features of now-canceled claims 7, 11, and 13-15. Claims 9, 10, 16, and 17 have been amended to correct matters of form. New claims 20 and 21 are supported throughout the specification, for instance, at page 8, lines 8 and 9; page 35, lines 8-10; Example 2, and Example 5.

After entry of this amendment **claims 4, 9, 10, 16, 17, 20, and 21 are pending in this application**. Consideration of the pending claims is requested.

Restriction Requirement:

Applicants thank the Examiner for correcting the record with regard to Group II of the restriction requirement.

In-Person Interview:

Applicants thank Examiners Yao and Canella for the courtesy of an in-person interview with their representative, Tanya M. Harding, on December 8, 2005. Also present at the interview was Cynthia Kanik as an observer on behalf of a licensee of the technology described in the application. During the interview, the written description rejection under 35 U.S.C. §112, first paragraph, was discussed. Applicants' representative proposed amending the claims to refer specifically to a Pin1 protein having a specific sequence, and functional fragments thereof. Applicants' representative had provided the Examiners with proposed claim amendments prior to the interview, which claim amendments are included in the amended claims presented herein. The Examiners suggested additional language related to the functional fragments, which

language is included in the presented claims. It is believed that agreement was reached with regard to the proposed claim language overcoming the written description rejection.

The enablement rejection was also discussed. Applicants' representative argued that the standard being used in the current action is legally incorrect, and inapplicable to Applicants' claims. Additional detail regarding the interview, and Applicants' arguments regarding the enablement rejection, are presented below. Though complete agreement was not reached, it is believed that the amendments and arguments herein are in line with suggestions made during the interview.

Applicants have received the Examiner's interview summary, dated December 21, 2005. Applicants thank Examiner Yao for providing the summary, but note the following inaccuracies for the record:

The interview was in person at the Patent Office, which is not noted on the summary.

No copy of the interview summary was provided at the conclusion of the interview.

Applicants' representative understood that agreement had been reached with regard to the written description rejection.

Claim Rejections under 35 U.S.C. §112, first paragraph:

Claims 4 and 7-19 have been rejected under 35 U.S.C. §112, first paragraph (written description) because, allegedly, "the claims are inclusive of a genus of fragments, variants, a polypeptide of SEQ ID NO: 2 . . .[; however] the disclosure fails to describe the common attributes or characteristics that identify members of the genus, and because the genus is highly variant, the [disclosed species are] insufficient to describe the genus." The Office concedes that "the activity of Pin1 protein (SEQ ID NO: 2), which is modulated by a composition, . . . meets the written description provision of 35 U.S.C. §112."

Applicants traverse this rejection. Nevertheless, to facilitate prosecution of the application, claim 4 and, therefore, dependent claims 9, 10, 16, and 17, have been amended to recite (with emphasis added):

A method for determining whether a composition inhibits the activity of *a Pin1 protein having the amino acid sequence set forth in SEQ ID NO: 2*, said method comprising:

incubating the composition with *a Pin1 protein having the amino acid sequence set forth in SEQ ID NO: 2 or a functional fragment thereof, wherein the functional fragment of the Pin1 protein has protein-protein interaction activity and/or peptidyl prolyl isomerase activity*, or with a recombinant cell expressing the Pin1 protein or a functional fragment thereof, under conditions sufficient to allow the composition to interact with the Pin1 protein or functional fragment thereof; and

determining the effect of the composition on the Pin1 protein activity.

As set forth in the MPEP (and the case law it cites), "the written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species" (MPEP §2163.05). A "representative number of species" means that the described species are representative of the entire genus (MPEP §2163.05). "Description of a representative number of species does not require the description to be of such specificity that it would provide individual support for each species that the genus embraces" (MPEP §2163).

The claimed genus of methods involves, in relevant part, a specific Pin1 protein (having SEQ ID NO: 2) and its functional fragments having protein-protein interaction activity and/or peptidyl prolyl isomerase activity. The specification clearly describes representative species of the molecules recited for use in the claimed methods. The specification sets forth the complete structure and function of a Pin1 protein having the amino acid sequence set forth in SEQ ID NO: 2, and the Office has conceded that this claim feature satisfies the written description requirement.

As the Office further admits, the specification sets forth representative functional fragments of SEQ ID NO: 2 having protein-protein interaction activity and/or peptidyl prolyl isomerase activity (*e.g.*, a WW domain and a PPIase domain). Moreover, because Applicants have provided the complete structure of the protein (SEQ ID NO: 2) from which all recited

fragments derive, and have further provided the functional properties of such fragments, the structure and function of all members of the genus of functional Pin1 (SEQ ID NO: 2) fragments are expressly and inherently provided by the specification. Thus, the specification provides a description of a representative number of species of "a Pin1 protein having the amino acid sequence set forth in SEQ ID NO: 2 or a functional fragment . . . [having] protein-protein interaction activity and/or peptidyl prolyl isomerase activity" for use in the claimed method. Accordingly, Applicants respectfully submit that amended claim 4, and dependent claims 9, 10, 16, and 17, satisfy the written description requirement, and request that this rejection be withdrawn.

Claims 4 and 7-19 have been rejected under 35 U.S.C. §112, first paragraph (enablement), allegedly, because "the specification does not teach any working example, which enables the composition in the claims that modulates the activity of Pin1 protein and its functional fragments." Applicants traverse this rejection.

As a first matter, Applicants have taken the Examiners' suggestion (made during the interview), and have amended the claims to recite methods for determining whether a composition **inhibits** (rather than modulates) the activity of a Pin1 protein. This amendment has been made to expedite prosecution of the case and allowance of the claims; Applicants expressly reserve the right to pursue protection for any subject matter removed by this amendment.

MPEP §2164.04 instructs that "[a] specification disclosure which contains a teaching of the manner and process of making and using *an invention* in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented *must be taken as being in compliance with the enablement requirement* of 35 U.S.C. 112, first paragraph, unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support" (emphasis added). "As long as the specification discloses *at least one method for making and using the claimed invention* that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement of 35 U.S.C. 112 is satisfied (MPEP 2164(b), citing *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970);

emphasis added). Moreover, "[c]ompliance with the enablement requirement of 35 U.S.C. 112, first paragraph, does not turn on whether an example is disclosed" (MPEP 2164.02).

The invention of amended claim 4 (and dependent claims 7-10, and 14-21) is "[a] *method* for determining whether a composition inhibits the activity of a Pin1 protein having the amino acid sequence set forth in SEQ ID NO: 2...." In simple terms, it is a screening method that utilizes "Pin1 protein having the amino acid sequence set forth in SEQ ID NO: 2 or a functional fragment thereof... [having] protein-protein interaction activity and/or peptidyl prolyl isomerase activity" to identify compositions that "inhibit[] the activity of a Pin1 protein...." The claim is *not* directed to compositions identified by the screening method, as the Office seems to mistakenly imply. Thus, the *claimed invention* is not a composition, but a *method*.

The specification clearly describes methods for identifying a composition that inhibits a Pin1 protein activity; see, for instance, page 19, lines 19-23 and, especially, page 20, line 14 through page 21, line 5. Moreover, during the in-person interview, Applicants representative provided numerous references evidencing that Applicants' prophetic examples work exactly as Applicants described in the specification (see, *e.g.*, U.S. Patent No. 6,462,173, and PCT Publication Nos. WO2004/028535 and WO02/060436; copies provided at the interview).

Furthermore, "[t]he more that is known in the prior art about the nature of the invention, how to make, and how to use the invention, and the more predictable the art is, the less information needs to be explicitly stated in the specification" to satisfy the enablement requirement (MPEP §2164.03 and cited case law). Functional screening methods were exceedingly well known in the art at the time of filing of the application. For instance, a brief search of the PubMed database (http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed) identified an extensive list of references dealing with functional screening methods. The following is a sample of those citations:

Liang *et al.*, "In vivo mutational analysis of the DNA binding domain of the tissue-specific transcription factor, Pit-1," *J. Biol. Chem.*, 270(43):25520-5, 1995;

Whitehead *et al.*, "Expression cloning of oncogenes by retroviral transfer of cDNA libraries," *Mol. Cell. Biol.*, 15(2):704-10, 1995;

Ali *et al.*, "Cloning and biochemical characterization of a plant protein kinase that phosphorylates serine, threonine, and tyrosine," *J. Biol. Chem.*, 269(50):31626-9, 1994;

Gstaiger and Schaffner, "Strong transcriptional activators isolated from viral DNA by the 'activator trap', a novel selection system in mammalian cells," *Nucleic Acids Res.*, 22(20):4031-8, 1994;

Jayawickreme *et al.*, "Creation and functional screening of a multi-use peptide library," *Proc. Natl. Acad. Sci. USA*, 91(5):1614-8, 1994;

Stavros *et al.*, "COS-7 cells stably transfected to express the human ETB receptor provide a useful screen for endothelin receptor antagonists," *J. Cardiovasc. Pharmacol.*, 22(Suppl. 8):S34-7, 1993;

Feig *et al.*, "Structure/function analysis of ras using random mutagenesis coupled with functional screening assays," *Mol. Endocrinol.*, 1(2):127-36, 1987;

Sanchez-Madrid *et al.*, "Antigens involved in mouse cytolytic T-lymphocyte (CTL)-mediated killing: functional screening and topographic relationship," *Cell. Immunol.*, 73(1):1-11, 1982.

"The more that is known in the prior art about the nature of the invention, how to make, and how to use the invention, and the more predictable the art is, the less information needs to be explicitly stated in the specification" (MPEP 2164.03). Screening methods in general were (and are) very well known; therefore, the bar is quite low for Applicants to teach one of ordinary skill in the art how to make and use another screening method.

Applicants note that, as was discussed during the interview, even if arguendo it were necessary to provide a teaching of compounds that had been or could be identified using the claimed method (and Applicants do not concede that such is necessary for enablement of the current claims), it would be clear to one of ordinary skill in the art at the time of filing the subject application that an antibody would be one such compound. It is well recognized, and has been for decades, that an antibody can serve very effectively to inhibit the binding or association between two proteins. Thus, in the current instance, at least this one type of compound would be

recognized as a composition useful to inhibit a Pin1 activity (*e.g.*, its protein-protein interaction activity) without any experimentation at all, much less undue experimentation.

In view of the amendment to claim 4 and the foregoing arguments, Applicants respectfully request that this rejection be withdrawn.

CONCLUSION

It is respectfully submitted that the present claims are in a condition for allowance. If any issues remain, the Examiner is requested to contact the undersigned attorney prior to issuance of the next Office action in order to arrange a telephone interview. It is believed that a brief discussion of the merits of the present application may expedite prosecution and allowance of the claims.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

One World Trade Center, Suite 1600
121 S.W. Salmon Street
Portland, Oregon 97204
Telephone: (503) 595-5300
Facsimile: (503) 595-5301

By: Debra Gordon
Debra A. Gordon, Ph.D.
Registration No. 54,128